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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,627	07/17/2003	Robert Rosenthal	60130-1790; 03MRA0203	1871

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EXAMINER	
ROSENBERG, LAURA B	

ART UNIT	PAPER NUMBER
3616	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/621,627	ROSENTHAL ET AL.	
	Examiner	Art Unit	
	Laura B. Rosenberg	3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8 and 9* is/are allowed.

6)☐ Claim(s) *1-6,10,12,14 and 16* is/are rejected.

7)☒ Claim(s) *7,11,13 and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/21/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment filed 21 September 2005, in which claims 2, 5, 6, 8, and 9 were amended and claims 11-16 were added.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 5, 12, 14, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Reid (5,979,612). In regards to claims 1, 3, 12, and 14, Reid discloses a method of detecting a wheel end condition comprising the steps of:

- Providing a wheel end (best seen in figures 2a, 3, 5)
- Detecting a lateral movement of the wheel end (for example, via sensors #25 or detector #100)
- Limiting vehicle speed in response to the lateral movement reaching a predetermined value (predetermined value is dependent upon gap and displacement amounts, for example, as discussed in column 5, lines 43-51)
- Activating a wheel end condition warning device (for example, via junction box #75; warning in form of visual and/or audible alarm; column 5, lines 5-12) in response to the lateral movement reaching the predetermined value

- Generating a fault code (for example, output signal #100; column 6, lines 37-44) in response to the lateral movement reaching the predetermined value
- Limiting vehicle speed in response to the fault code (for example, by applying the brakes to a specific wheel/axle)

In regards to claims 5 and 16, Reid discloses a wheel end condition detection system comprising:

- Wheel end assembly (best seen in figures 2a, 3, 5)
- Controller (for example, including sensor/actuator #25 or detector #100) detecting lateral movement of the wheel end assembly and generating a fault code (for example, output signal #100; column 6, lines 37-44) in response to the lateral movement reaching a predetermined value (predetermined value is dependent upon gap and displacement amounts, for example, as discussed in column 5, lines 43-51)
- Warning device (for example, including junction box #75; warning in form of visual and/or audible alarm; column 5, lines 5-12) activated in response to the fault code
- Vehicle component (for example, including brake system #22, 23) other than the warning device in electrical communication with the controller (for example, via spring break valve #29) and controlled in response to the fault code, and able to maintain safe operation of the vehicle (for example, by applying the brakes to a specific wheel/axle)
- Second warning device (both a warning light and an audible alarm can be included in the warning device, one of these being a first warning device and the other being a second warning device) activated in response to the fault code

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reid (5,979,612) in view of Ehrlich et al. (2001/0030466). In regards to claim 2, Reid discloses the predetermined value triggering a brake system fault code (for example, via brake module #22). In regards to claim 6, Reid discloses a brake system sensor (for example, including brake module #22) being connected to the controller (for example, including sensor/actuator #25 or detector #100) and being able to sense the lateral movement of the wheel end assembly (columns 3-4). However, Reid does not specifically disclose the brake system being an anti lock brake system. With respect to claim 2, Ehrlich et al. teach a method of detecting a wheel end condition comprising the steps of providing a wheel end (best seen in figures 4, 8), detecting lateral movement of the wheel end (for example, via metal proximity sensing elements #124, 126), and limiting vehicle speed in response to a variety of data collected by sensors (by modifying air pressure level in the brake chambers; paragraph 0031; collection of sensor data can be seen in flow chart in figure 3), which triggers an anti lock brake system (ABS) fault code (integration of ECM with ABS module is discussed throughout the specification). With respect to claim 6, Ehrlich et al. teach a wheel end condition detection system (can be seen in figure 10) comprising a wheel end assembly (best

seen in figures 4, 8), a controller (including ECM) detecting lateral movement of the wheel end assembly (via metal proximity sensors #124, 126) and generating a fault code in response to lateral movement reaching a predetermined value (paragraphs 0074, 0075), a warning device activated in response to the fault code (paragraphs 0074, 0075), a vehicle component (including brake system) other than the warning device controlled in response to a variety of data collected by sensors that is able to maintain safe operation of vehicle (for example, by modifying air pressure level in the brake chambers; paragraph 0031), and an ABS sensor connected to controller for sensing lateral movement (integration of ECM with ABS module is discussed throughout the specification). It would have been obvious to one skilled in the art at the time that the invention was made to modify the brake system of Reid such that it comprised an anti lock brake system as claimed in view of the teachings of Ehrlich et al. so as to provide a safer braking system for the vehicle.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reid (5,979,612). Reid does not specifically disclose that the vehicle speed is limited to approximately 5mph or less. However, It would have been obvious to one skilled in the art at the time that the invention was made to modify the step of limiting vehicle speed of Reid such that it comprised a vehicle speed of approximately 5mph or less as claimed since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch,* 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Further, a very slow speed, such as 5mph or less, would be preferred in

the event that the condition of the wheel end is failing and thus creating an unsafe driving situation.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reid (5,979,612) in view of Farrell (4,798,560). Reid does not disclose the specifics of the wheel end assembly with respect to bearings, races, and other such components. Farrell teaches a wheel end assembly including a unitized bearing (including #10). It would have been obvious to one skilled in the art at the time that the invention was made to modify the wheel end assembly of Reid such that it comprised unitized bearing as claimed in view of the teachings of Farrell so as to counteract wheel loading, particularly during cornering maneuvers of the vehicle (Farrell: column 1).

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reid (5,979,612) in view of Keiser (3,806,214). Reid does not disclose the specifics of the wheel end assembly with respect to bearings, races, and other such components. Keiser teaches a wheel end assembly including a unitized bearing (including #A). It would have been obvious to one skilled in the art at the time that the invention was made to modify the wheel end assembly of Reid such that it comprised unitized bearing as claimed in view of the teachings of Keiser so as reduce the number of machining and assembly operations, thus providing an assembly that is simple in construction and inexpensive to manufacture and includes a preadjusted, prelubricated and sealed bearing (Keiser: column 1).

Allowable Subject Matter

9. Claims 8 and 9 are allowed.

10. Claims 7, 11, 13, and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura B. Rosenberg whose telephone number is (571) 272-6674. The examiner can normally be reached on Monday-Friday 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (571) 272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Laura B. Rosenberg

Laura B Rosenberg
Patent Examiner
Art Unit 3616

LBR

12/22/05

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